THE

CHICAGO MEDICAL JOURNAL.

VOL. XXVII.—MAY 15, 1869.—No. 10.

REVIEWS.

Monthly Review of Medical and General Science in France and Europe.

Before entering on our subject we think it advisable to make a few preliminary observations with respect to the programme which we intend to follow.

As your journal is intended especially for the members of the medical profession, we shall devote our principal attention to medical, surgical and pharmaceutical subjects. As the medical body is the only recognized authority on general scientific subjects among the non-professional public, and as it is to physicians that people look for accurate information with regard to facts announced in the non-scientific press, we shall notice all the events in connection with general science which we think worthy of record. We shall abstain as much as possible from criticism, and try to submit facts to the judgment of our readers in such a manner as to enable them to draw their own conclusions.

This much said we commence our review.

An important paper has just been read before the Impe-

rial Academy of Medicine, by Dr. Dupré, Professor of Clinical Surgery at the college at Montpelier. Dr. Dupré divides pleurisitic effusions into three principal orders:

1st. Essentially inflammatory flowings, namely, those which accompany true pleurisies or which succeed them.

2d. Serous accumulations, actual dropsies which occur in the pleura in connection with organic lesions or general deteriorations.

3d. Rheumatismal or sero-plastic effusions. These last are the principal subjects of the paper.

Inflammatory flowings, according to Dr. Dupré, should not be combated by thoracic puncture. In the majority of cases, it might almost be said always to yield to other treatment. Serous accumulations in the pleura can be removed by no other means than puncture. Every thing tends to prove this, as well as the nature of the extravasated serum and its incessant tendency to accumulate, to the great danger of the lesions which have given rise to the extravasion. Rheumatismal or sero-plastic effusions require puncture of the pleura and the evacuations of this extravasated fluid, for these operations are calculated to obviate serious accident, and add nothing to the danger of the situation. Under the name of rheumatismal and sero-plastic effusions, which have been so well described by Mr. Pidaux under the name of latent pleurisy, and which have been so frequently observed by Michel Levy, Tholasan, Lancerotte and Toussagrioes.

The most important accompaniments of these effusions are the following: The beginning is generally accompanied by a slight trembling and a painful feeling of constraint in a part of the thorax. Sometimes, immediately afterwards pains in the joints, or sciatic neuralgia ensue. In other cases the pain in the thorax is very acute, and seriously impedes respiration, but it is superficial and not confined to any particular region, and posseses all the symptoms of pleurodynia, and of rheumatism of the pectoral

muscles. It often happens that in the course of this painful state, and frequently when its intensity is decreasing, an overflow of fluid which may or may not become considerable takes place in one of the pleural cavities. This effusion is unaccompanied by cough, oppression or pain. There is no fever, the appetite is unimpaired and sleep uninterrupted. However, a livid paleness, an abnormal motion of the face and neck, sudden interruptions of the breathing in the middle of deep inspirations, and irregular pulse, indicate the existence of the affection. In such cases medical treatment is uncertain in its results, tardy in its effects, and often allows the formation of dangerous lesions. Sudden death not unfrequently occurs. Dr. Dupré advocates puncture in these cases as a certain means of preventing lesions, without adding in any way to the gravity of the disease. After giving the statistics of the operation of thoracic puncture, which we append, Dr. Dupré resumes his conclusions as follows:

1st. There exist idiopathic pleuritic effusions, of which apyrexia, latency and progression are the ordinary characteristics.

2d. They are distinguished from inflammatory effusions, and from hydropic accumulations by the clinical characteristics which make them approach rheumatisms.

3d. The presence of elastic serosity in the pleura, and its prolonged stay there, is a real and considerable danger. It should be removed as promptly as possible, either indirectly by the aid of the medicine, or directly by surgical means.

4th. Thoracic puncture, practiced according to the rules prescribed, is absolutely harmless, and its immediate action and direct effects expose the patient to no danger.

5th. It should be practiced immediately in case of effusions of more than a fortnight's standing, especially those which are situated on the left side, and occupy all the pleural cavity.

6th. In cases where effusions form under the care of a

physician, recourse should not be had to this operation before the tenth day, and when they occupy at least two-thirds of the pleural cavity.

These principles put into practice by Dr. Dupré have produced the following results:

Patients operated on in the Second Week, 47.....	Cures,	46.
	Deaths,	1.
		47.

Where it was impossible to perform the operation at an early period of the disease, the results were not so favorable.

Patients operated in the First Month, 19.....	Cures,	15
	Deaths,	4
		19
" " " 2d " 8.....	Cures,	5
	Deaths,	3
		8
" " " 5th " 1.....	Cures,	1
" " " 17th " 1.....	Cures,	1

This table proves that sero-plastic effusions of very old standing can be cured, and that prompt thoracic puncture is an excellent habitual mode of treatment. The aid of medicine should not, however, be despised. On the contrary, we must rely on it to prepare and assure the success of the operation.

The frequent accidents resulting from the inhalation of chloroform have prompted from their very origin the study of several experimental chemists. Jobert de Lamballe, Robert, Abeille and Siégeoris have written on the happy results of electricity applied as a means of restoring persons asphyxiated by chloroform. With the same object Messrs. Legros and Onimus have experimented on the employment of continuous currents of electricity.

The works of these two last authors have been submitted to the Imperial Society of Surgery. We think that a résumé of the experiments made before a committee of this society, and of the conclusions to which the gentlemen chosen by it to report on this subject have appended the authority of their reputations, will be read with interest.

Three white rats were placed under a bell glass thirty centimetres in height and fifteen in breadth, with a sponge on which a quantity of chloroform had been poured.

The first rat was removed after respiration had entirely ceased, when every trace of sensibility and voluntary movement had disappeared, but before the pulsations of the heart had discontinued. The poles of a voltaic pile were then introduced, one, the negative, into the rectum; the other, the positive into the mouth. The current was maintained during some seconds, after which the wires were withdrawn. In a little while irregular respiratory movements could be perceived, which gradually became more frequent; the pulsations of the heart increased in strength, and gradually sensibility and general movement returned. The animal was completely restored to life.

The second rat was taken from under the bell-glass almost in the same conditions, the movements of the heart being, however, less perceptible. The current failed to restore the animal to life.

The third rat, when taken from under the glass, had ceased to breathe; sensibility and general movements were extinguished; the pulsations of the heart were still perceptible. The application of the current succeeded in reviving it. It is important to observe that all these experiments are applicable to cases of asphyxia by chloroform, and not syncope.

As a means of combating chloroformic asphyxia, galvanization, as proposed by Messrs. Legros and Onimus, appears to the committee to be decidedly efficacious. The animals on which the preceding experiments were made may be

considered as devoted to certain death, if left to themselves.

The observations made by Mr. Maurice Perrin on dogs, cats and rabbits prove that animals asphyxiated by chloroform, in these conditions, succumb, if abandoned to the efforts of nature.

The preceding experiments are, we believe, of very serious importance, and calculated to render valuable services to surgical practice. One very important item should be remarked, that the continued current recommended by Messrs. Legros and Onimus only restores the action of the heart when it is made to pass through the cerebro-spinal axis.

The committee next proceeded to experiment upon inductive currents, and obtained as satisfactory results as with the voltaic pile. This fact induced the committee to give the preference to the last; firstly, because an inductive apparatus can be easily procured and is portable; secondly, because induced currents applied to the human heart, diaphragm, and phrenic nerves have received the sanction of experience, while continuous currents, applied to the same organs in the similar cases have not succeeded in producing the same results. Indeed, Friedberg, of Berlin, and Wide, of Hargrave, have successfully employed faradization of the phrenic nerves. Maurice, of the Royal Berg Hospital, has saved a man by passing a current through the elongated ganglion in communication with the epigsatrium. Luimssen and Duchesse de Boulogne restored to life a man who had asphyxiated himself with the vapor of charcoal, by means of faradisation of the epigastrium. Whatever may be thought of previous experiments and of the probable advantages of inductive electricity, Messrs. Legros and Onimus must be allowed the credit of having placed at the disposal of practitioners a new and very efficacious means of combating one of the gravest accidents of a preliminary to surgical operations, for which they cannot be too completely prepared.

Since chemical matches have come into general use, poisoning by arsenic, which formerly occurred so frequently, seldom comes under our notice. But the fatal facility of procuring phosphorus has, unfortunately, enabled guilty persons to replace it with advantage to their purpose. Criminal statistics prove that this substance is that most frequently employed in poisoning. Up to the present, medical science possessed no antidote to this poison, and its victims were fatally devoted to death.

M. Personne, a distinguished chemist, who has been long investigating this subject, has at length discovered an antidote to the disorganizing agent. Knowing, already, that essence of turpentine and other carburets of hydrogen deprive phosphorus of its property of becoming luminous in the darkness, and of burning at a low temperature, knowing that in the match manufactories at Stafford, in England, the workmen are protected from the necrosis resulting from the vapor of phosphorus by carrying a small phial of essence of turpentine attached to their breasts, M. Personne undertook a series of experiments which we detail for the benefit of your readers.

The experiments were fifteen in number, and were made in parallel series of three, on dogs of a middling size, and chosen, as much as possible, of the same strength. No. 1 of each series was given phosphorus alone. No. 2 was given the essence two hours after the poison. No. 3 received the antidote immediately after the injection of the phosphorus.

The essence and phosphorus were, in each case, conveyed to the stomach of the animal by means of an æsophageal catheter—the phosphorus always in a state of solution in a fatty substance. In one case it was administered in the shape of the paste used for making matches. The dose varied from one to three decigrammes.

No. 1 of each series, to which phosphorus alone had been given, making, in the five series, five animals, died.

Numbers 2, those animals to whom the antidote had been administered two hours after the injection of the poison, at first exhibited the same symptoms as the animals which had been given the poison alone, but finally, after copious discharges from the stomach, recovered, with one exception.

Numbers 3, finally, to which the antidote had been administered immediately after the poison, were only slightly indisposed, with the exception of one, which succumbed.

The animals belonging to series 2 and 3, which died, had absorbed 30 centigrammes of phosphorus, an enormous dose. In addition they had been placed in a temperature so cold as to freeze the water put at their disposal. Finally, notwithstanding the large quantity of phosphorus injected the antidote was administered in the same amount as in the other cases. Phosphorus kills by depriving the blood of the necessary oxygen, thus preventing its hæmatosis.

Essence of turpentine appears to possess the property, when absorbed, of preventing phosphorus from burning in the blood, as it prevents its combustion at a low temperatuae. The results of these experiments we regard as highly satisfactory, inasmuch as they give us a means of paralyzing the action of this poison, and finally eliminating it from the blood.

Some time ago M. Barbosa, of Lisbon, recommended sulphuret of potassium as a remedy for the croup. Dr. Labat and several other French physicians tried it without much success, notwithstanding the striking results which M. Barbosa had experienced in its employment. Dr. Labat had tried sulphuret of potassium as an expectorant, to combat the dry cough, which is so dangerous a stage in the disease. Not obtaining from this specific the results which he expected in the case of a little girl two years of age, Dr. Labat administered acetate of potash, which can be given in a large dose, and possesses the advantage of not having a strong flavor. He prescribed this salt in doses of 10

grammes dissolved in 120 grammes of water, to be taken by table spoonfuls every half hour. Three hours of this treatment produced an abundant expectoration, but, in this particular case, the secretion becoming purulent, the child succumbed. Convinced, however, that he had found a medicine capable of producing an abundant mucous expectoration, Dr. Labat administered acetate of potash with proportions of 8 grammes to 120 grammes of water to a child of 18 months, in which the cough had assumed an alarming dryness, twenty-four hours after tracheotomy. The following day, mucous expectorations had re-appeared, and the child recovered, after a treatment of 16 grammes of acetate of potash. Since this last case acetate of potash has been several times used under similar circumstances, notably, by Dr. Dudson, of St. Andrew's Hospital, at Bordeaux, and always with marked success.

Dr. Secorizat, physician to the Trans-Atlantic Navigation Company, has just published a remedy which he considers infallible for sea-sickness. It consists of faradization of the epigastric region, accompanied by the external use of a solution of atropine.

During the first day he does not attempt to arrest vomiting, when its frequency does not pass the limit natural to the temperament of the patient.

Experience has proved that if these evacuations are suddenly stopped at the commencement the result is an obstinate constipation. However, as soon as sea-sickness passes the limits of an ordinary indisposition, means of combating it should be at once sought. Especially in the case of persons of an extremely nervous temperament, as convulsions of a very grave nature might ensue.

When the illness assumes a serious character, Dr. Secorizat recommends friction of the epigastric region with a cloth dipped in water which may have a little soap dissolved

in it; then, when this region is completely cleared of all greasy matter he uses the following lotion:

Sulphate of Atropine, 2 or 3 centigrammes.
Water, 30 grammes.

He afterwards applies a copper plate of four or five centimetres in diameter, in communication with one of the poles of a Rumkorff's Medical Aid within five or six centimetres of the navel in an upward and outward direction; the other meter, furnished with a wet sponge, is then moved from the hollow of the epigastrum to the plate, following the direction of the curves of the stomach. Five or six applications on each side generally suffice. These should be made as near as possible to the costal cartilage, without, however, touching them. The intensity of the current should be graduated according to the susceptibility of the patient, and the violence of the vomiting. It is sometimes advisable to use a small metallic pencil, instead of the plates, in order an energetic rubefaction and an efficacious revulsion. Since 1865, when Dr. Secorizat commenced these experiments he has had an opportunity of repeating them in several hundred cases, on persons of both sexes and of every social position. His success has been nearly always prompt and decisive.

Perhaps the means employed by Dr. Secorizat may be equally well adapted for checking vomiting peculiar to pregnancy, but in this case the physician should give the utmost attention to the effect of electricity on the general condition of the mother and child.

General Science.

The deplorable accident which occurred a short time ago in the Place de la Sorbonne, was, as our readers are probably aware, caused by an explosion of a quantity of powder destined to charge sub-marine torpedoes. Since that occur-

rence public attention, in France, has been intensely interested in the causes which brought it about, and the proper measures to be adopted to prevent the recurrence of similar accidents. The general press has given currency to the most erroneous reports of the origin of the explosion, and it is to set the matter right before the public, or at least, before that part of it best capable of judging of the matter, that we occupy your readers' attention with this subject. The non-scientific press universally stated that the accident was due to the spontaneous ignition of picrate of potash, a salt, according to their reports, which can scarcely be touched or heated without exploding instantly. This is a grave error which it is of moment to rectify, for we are persuaded that in no remote future, the picrates are destined to play an important part in industry. Picrate of potash is by no means the terrible salt represented. It can be struck or heated to 300 degrees without exploding. This fact is so well established that Mr. Designolle, inventor of a new powder, into the composition of which picrate of potash enters, has been anthorized to conduct his experiments in the Bouchet Powder Manufactory, one of the most important government mills. If the substance were as dangerous as the general press represents it, it is very unlikely that Mr. Designolle would have obtained this privilege. The quality which has so lately called attention to this salt of potash, is that it produces, when ignited, a large quantity of gas, and consequently possesses an enormous bursting power. To render its combustion complete, however, it must be mixed with nitrate or chlorate of potash, which burn the nascent carbon contained by the picric acid.

With nitrate of potash the combustion of the picrate is is slow, but nevertheless complete, a fact which permits its use as constituent of an ordinary gunpowder, which is much stronger than that composed of sulphur, charcoal and nitre. With chlorate of potash combustion is complete and instantaneous. So combined picrate of potash becomes

an explosive powder absolutely unfit for fire arms, but excellent as a charge for bombs, and, above all, for the marine torpedoes. The instantaneous explosion of the mixture of picrate and chlorate of potash, a substance which, alone, can be hammered, and even pulverized in an iron mortar, with a pestle of seventy kilogrammes, as we have seen ourselves a hundred times. Chlorate of potash in combination with any organic substance, such as sugar or gum, is very easily exploded. It will be easily understood, then, that when mixed with an active substance such as picrate of potash, it becomes a very sensitive composition.

It is thus to the chlorate, and not to the picrate, of potash, that the mixture of these substances owes its peculiar susceptibility to explode, but it is the picrate which gives it the really fearful bursting power which it possesses.

EDITORIAL NOTES.

We published, in No. 3 (Feb. 1st.) of the JOURNAL, a translation of the splendid generalization of Dr. Rabuteau, termed, by him, the *Thermic Law*, and its application to the *biatomic metalloids*. Dr. Rabuteau has extended his investigations upon this subject to the *monoatomic metalloids*. This law, as applied by Dr. Rabuteau to the former group of bodies, and determining for them a therapeutic activity in direct ratio to their atomic weights, or, what is the same thing, in the inverse ratio to their specific heat, had been already applied to certain of the latter, by Bouchardat and Stuart Cooper, who discovered that chlorine is more active than bromine, and the latter than iodine. M. Rabuteau has demonstrated that fluorine satisfies this law, for the fluorides are the most active of all the monoatomic metalloid compounds. He has determined, moreover, that the fluor-

ides are not so dangerous as had been imagined, for one grain of the fluoride of sodium having been injected into the veins of a dog, produced only transitory effects, consisting in a very marked febrile reaction and abundant salivation. M. Rabuteau having taken twenty-five centigrammes of fluoride of sodium, experienced only slight epigastric uneasiness. The insoluble fluorides, such as those of calcium of zinc or lead are inoffensive. The fluoride of barium, a slightly soluble salt, is poisonous, not on account of the fluorine which it contains, but of the barium, which is poisonous. The fluoride of strontium is much less active than the preceding salt. The most dangerous compounds of fluorine examined by the author are those of silver, and of hydrogen (hydro-fluoric acid). These compounds are painful caustics and the cicatrization of the part to which they are applied ensues only at the end of three weeks.

We shall take occasion, hereafter, to refer to the author's observations upon the compounds of iodine, bromine and chlorine, which, at this moment, possess peculiar interest for practical men, in view of their increasing popularity and extensive application as therapeutic agents.

The investigations of M. Hermann into the chemical composition of muscle, and the chemical modification which muscular fibre undergoes during contraction, have induced him to give to the electrical phenomena which take place in nerves and muscles, an interpretation based solely upon the chemical changes which take place in these tissues.

M. Hermann asserts that muscle in its normal state always contains a certain very complete nitrogenous substance dissolved in the muscular plasma. This subtance, called *inogene*, may be decomposed and form a new product, amongst other carbonic acid, sarcolactic acid, and an albuminoid body, which is separated first under a gelatine form, and which subsequently becomes solid, forming myosine.

* Etude expérimentatale sur les effets physiologiques des fluorures et des composes metalliques en general. Paris, 1857.—*German Balliere.*

This decomposition of inogene occurs spontaneously but very slowly in the state of rest; it occurs immediately under the influence of excitants of muscular contractility. The active state of muscle is due exactly to this rapid decomposition of inogene, aud this substance once exhausted, muscular activity is no longer possible.

This substance has not yet been isolated, because the least chemical manipulation decomposes it. Regarding its composition it may be placed by the side of hæmato-globuline, for during decomposition only they both afford an albuminoid substance.

In nerves there should be an analogous substance, which should undergo decomposition with equal rapidity, but without occasioning the formation of myosine. From these chemical data M. Hermann establishes the two following principles:

1st. If in a nervous or muscular fibre, there are points at which the decomposition of this fundamental substance occurs more rapidly than at others; the former possess, relatively to the latter, negative electricity, and the currents will be so much the stronger as the difference in decomposition is greater.

2d. The decomposition which occurs in nerves and muscles is as much more slow during the active state of these tissues, as it is more rapid during the state of repose.

The first proposition serves to explain why muscular currents are formed between the horizontal surface of a muscle or of a nerve and its artificial transverse surface, for the portion denuded and exposed to the air exhibits a rapidity of decomposition greater than the portion intact; so the transverse section is negative by relation to the longitudinal section, which is positive.

M. Hermann asserts another general fact, that, of uninjured muscles the smaller extremity is negative in comparison to the larger. But of the sartorius muscle the inferior is positive, although smaller than the superior, which is

negative. The same is true of the semi-membranosus, whose least voluminous extremity is positive. These conclusions of M. Hermann are contested by M. DuBois-Reymond, and the discussion between these two prominent authorities is criticised by M. Onimus in Robin's *Jour de l'Anatomie et de la Physiol.*

M. Legros and Onimus having concluded a very extensive series of experimental investigations into the subject of the movements of the intestine, submit the following conclusions:

Inspiration and expiration induce in the intestine changes of tension which vary with the mode of respiration.

The movements proper to the intestine are of three sorts: 1st. the peristaltic movement, which is normal; 2d. the antiperistaltic movement; 3d. contraction.

Every peristaltic movement is characterized by an abrupt contraction, followed by a distension of longer duration.

Isolated peristaltic movements may occur in a restricted portion of the intestinal tract. After a series of contractions there is generally a period of prolonged repose.

Contractions are most frequent in the upper portion of the intestinal canal. We have never observed more than eighteen of them per minute.

The contractions of the large intestine differ from those of the small by their amplitude, their duration and their form.

The diagram of the act of defacation is entirely special, and suggests that obtained after poisoning with strychnia. The movements of the stomach have not the regularity of those of the intestine. They are of two sorts according as they are observed at the pyloris or at the great cul-de-sac.

The antiperistaltic movement does not combine with the peristaltic.

The peristaltic movement is due to the action of the nervous cells of the intestinal walls upon the smooth fibres.

These cells may themselves undergo the influence of the caliac plexus and of the cerebro-spinal centres.

Arrest of the arterial circulation augments or determines peristaltic contractions. Arrest of the venous circulation induces no analogous effects.

This pathological condition cannot serve to explain normal movements.

Induction currents applied directly to the insestines cause contraction at the level of the poles; between the poles there is relaxation of the walls.

Continuous currents prevent peristaltic movements, and induce a diminution of tension if the current follows the normal direction of the movements, or an augmentation, if the currents pass in the opposite direction. Electrization of the spinal cord by continuous currents augments, perceptibly, the peristaltic contractions at the moment of their application.

Induction currents upon the splanchnic nerves augment, progressively, the tension, without determining peristaltic movements.

Continuous currents upon the splanchnic nerves occasion peristaltic contractions. Electricity directed upon the nervous plexi and upon the mesenteric nerves produces analogous effects.

Interrupted currents upon the pneumogastric cause dilatation and immobility öf the intestine. This phenomenon occurs through reflex action. They iuduce, on the contrary, directly, contraction of the stomach.

Continuous currents, directed upon the pneumogastric, act but little upon the intestine. They arrest normal or pathological contractions of the stomach.

Direct excitation of the intestine, by pinching or otherwise, induces, at the first instant, distention followed by energetic contraction.

Ice-water arrests peristaltic movements, inducing contraction; hot water intensifies them.

Water holding in solution chloride of sodium, increases the energy of the movements.

Croton-oil determines contraction, in addition to those for the expulsion of matters; ipecacuanha acts in an analogous manner.

Saline purgatives do not increase the energy of the contractions.

Atropine, in weak doses, increases the peristaltic movements, but in strong doses abolishes them.

Morphine retards the contractions without abolishing them.

Strychnia, in poisonous doses, determines spasmodic contractions, when there are general convulsions.

From a review in Robin's *Journal de l'Anatomie et dex Animaux* of recent experimental investigations upon the innervation of the sphincters of the anus and bladder, by Professor Masius (Belgium), it appears that M. Masius, in 1867, demonstrated that the spinal cord cut at the level of the intervertebral disk which separates the sixth and seventh lumbar vertebræ, induced in rabbits a relaxation of the sphincter and a loss of its reflex contractility; and, likewise, that by destroying the spinal cord immediately anterior to this point, and at different distances from it, the sphincter ani, far from relaxing, remains contracted, and even more strongly, and also manifests more vigorous reflex contractility; he has, likewise, determined that a section made below the disk aforesaid induces inverse effects. He has hence concluded the existence in rabbits of a centre (ano-spinal centre) placed in the cord at a point corresponding to union of the sixth and seventh lumbar vertebræ. He has assigned to it the function of controlling the tonic as well as the reflex contraction of the sphincter muscle of the anus. We admit that inhibitory (empêchantes) fibres reach this centre, since the section of those fibres which unite it with the cerebral nervous system increases the tonic and reflex contractions of the sphincter.

Since the publication of this memoir he has extended his experiments to dogs.

It results from these new experiments:

1st. That there exists, in the spinal cord of dogs a centre (ano-spinal centre) situated about the level of the middle and lower third of the fifth lumbar vertebra.

2d. That this centre controls, as in rabbits, the tonic and reflex contractions of the sphincter ani.

3d. That inhibitory or intercepting fibres reach this ano-spinal centre, since every section made in advance of this exaggerates the tonic and reflex contractions.

These experiments prove, likewise, that the ano-spinal centre of dogs is placed higher, that is to say, more in advance than the same centre in rabbits, in which it is located at the level of the intervertebral disk of the sixth and seventh lumbar vertebræ.

It should be remarked that the spinal cord is relatively shorter in dogs than in rabbits; in the former it ceases at the union of the seventh lumbar and the first sacral vertebra. It might then be supposed that in man, in whom the spinal cord is prolonged only to the end of the first lumbar vertebra, if there be an ano-spinal centre it must be situated in the dorsal region. Moreover, this seems demonstrated by an observation reported by M. Gluge. He detected, as a consequence of a fracture of the vertebral column in the region of the sixth dorsal vertebra, relaxation, and loss of tonicity of the sphincter ani, but, likewise, the preservation during a month, of the reflex mobility of this muscle.

These observations warrant the inference, as M. Schwann, our illustrious master, asserts, that there exist, in man, two separate centers: one controlling the tonic, the other the reflex movement of the sphincter ani. But, as may have been perceived, from the investigations referred to above, it has always been observed, as well in rabbits as in dogs, that the same restricted portion of the cord holds under its control both the reflex and tonic mobility of the orbicular

muscle of the anus. Hence the observations of M. Gluge appear insufficient to prove the existence, in man, of two separate centers.

Important investigations have been made, recently, to determine the influence of the nervous system upon the bladder. *Budge attempted to demonstrate that the cerebral peduncles furnished motor fibres to the bladder, fibres which traverse the anterior columns of the cord, and the third and fourth sacral nerves. These fibres transmit voluntary impulses to the bladder. A second source of motor fibres, disconnected with the act of volition, exists in the lumbar portion of the cord. Giannuzzi and Budge determined, by experiments made upon dogs, that two principal points of the spinal cord control the contractions of the bladder; one corresponding to the third and the other to the fifth lumbar vertebra.

The fibres which separate from the spinal cord, at the level of the these lumbar vertebra, pass by the cord, and the mesenteric ganglia of the great sympathetic, to reach the hypogastric plexus.

The fibres which originate at the fifth lumbar vertebra reach the hypogastric plexus directly by the sacral nerves. The sensory nerves of the bladder, which transmit reflex excitation to the spinal cord, are contained in the hypogastric plexus; they reach the spinal cord through the anastomotic branches of this plexus, with the trunk of the lumbar sympathetic, by communicating branches which unite this last with the cord, and, lastly, by the posterior lumbar roots.

This much was known of the action of the nervous system upon the bladder. From the experiments which M. Masias has made upon this subject, he thinks the following conclusions may be drawn:

---

*Constatts Jahresbericht über die Leistungen in den Physiologischen Wissenschaften in Jahre, 1864. S. 237.

1st. Every section of the spinal cord made above the ano-spinal center, induces an exaggeration of the persistent contraction of the sphincter vesicæ.

2d. Every section performed a little lower induces a relaxation of this muscle.

3d. The tonic and the reflex motility of the sphincter are under the control of the same portion of the cord, which is situated, in rabbits, at the union of the middle with the lower third of the seventh lumbar vertebra; and in dogs, on a level with the lower portion of the fifth lumbar vertebra.

4th. Another center (vesico-spinal) must be admitted, below the ano-spinal center, (*) which, although very near the first is perfectly distinct from it.

Before concluding, the author adds, the analogy existing between these two centers ano-spinal and vesico-spinal ought to be indicated: the first controls the tonic and reflex contractility of the anal sphincter; the second regulates the tonic and reflex contractions of the sphincter of the bladder.

We have determined that inhibitory (empêchantes) fibres reach the anal center; and analogous fibres extend to the vesico spinal center, for, when the fibres which maintain the communication of this center with the cerebral system are cut, the tonic and reflex motility of the vesical spincter are augmented.

---

*The center termed here vesico-spinal must not be confounded with genito-spinal, of Budge; this last center regulates the involuntary contractions of the bladder; the first controls the tonic and reflex contractions of the sphincter of the bladder.—*Masius.*

COMMUNICATIONS.

BY N. SHERMAN, M.D.

PLYMOUTH, MARSHALL CO., IND., April 13, 1869.

CHICAGO MEDICAL JOURNAL:

By the politeness of Dr. J. D. Gray I witnessed the examtion of the body of Wm. Frantz, aged about twenty-five years. He was wounded in the U. S. service, in 1863, the ball entering at the lower portion of the ensiform cartilage and passing backwards and slightly upwards, making its exit on the same side just to the left of the spine. After the healing of the wound until April 5, 1869, his general health had been good. On that day, while making great exertion pulling at a rope, he was taken sick with severe pain in the stomach and vomiting. From that time until his death, eight days after, all medical aid gave no relief.

Autopsy.

Twenty-four hours after death. Drs. Gray, Baily and Lessley. Considerable emaciation, abdomen sunken, left side of the chest much enlarged, after opening the chest and abdomen. The stomach was found where the left lung should be, much enlarged and distended with fluids and gas, compressing the left lung into a very small space at the superior portion of the lung cavity, at the same time forcing the heart wholly to the right side of the sternum, posterior to the ensiform cartilage, and to the left, in the line of the gun-shot wound was an opening from one and one-half to two inches in diameter, through the diaphragm. Through this opening the stomach proper, the large omentum and intestine were unmistakably strangulated, while the stomach

except slight traces of inflammation, appeared quite healthy.

The thickened, smooth condition of the edges of the opening in the diaphragm clearly indicates that the opening had existed since the time of his wound. He had been, during the greater portion of the time for the past five years, actively engaged at hard labor, without suffering any pain or considerable inconvenience. That the passage of the stomach omentum and intestine through the opening in the diaphragm, compressing the lung, was recent, was evident from the fact that the lung was partially inflated to its normal condition.

Three Cases of Trichnasis in Clay Co., Illinois.

BY E. W. BOYLES, M. D., OF CLAY CITY, ILL.

A family by the name of Stafford, consisting of the mother and three daughters, moved into this county about the first of March last. They had formerly lived in Edgwood, in the adjoining county of Effingham. Shortly after coming into this county the three daughters, aged respectively six, twelve and sixteen years, were taken sick; they first complained of weakness, soreness and tenderness of muscles, stiffness of the limbs, which increased till the two oldest were soon prostrated. There was, also, considerable gastric derangement present, and fever of a low form with decided exacerbations, in the evening ensued.

Dr. Anderson, of this county, was called in, and diagnosed the disease *trichinasis*, (i e) he said if it was not that he did not know what it was. Dr. Duncan was called in consultation, and subsequently Drs. Green and McKee, of Louisville. They all arrived at the same conclusion, that the disease was *trichinasis*.

In about a fortnight from the time of attack, the girl aged twelve years died; a postmortem was held, at which the Doctors mentioned above, and Dr. J. W. Hitchcock, of Louisville, in this county, officiated, but having no glass of any considerable power, no satisfactory conclusions were arrived at. Dr. Hitchcock removed a portion of the biceps muscle of the left arm, and sent it to me for microscopical examination. Upon placing a small portion under the glass the parasites *trichina spiralis* were to be seen in great numbers. I tried several specimens and never failed to find them in great abundance; they were of various sizes, but none encysted. I then enclosed a small portion of the muscle in a letter, and sent it to Dr. J. Adams Allen, of Chicago, requesting him to examine it with the microscope and report to me the results. I did not state to him that I had made any examination of it myself. In a few days I received a letter from Walter Hay, M. D., of Chicago, from which I make the following extracts: "Your letter of the 13th inst. was handed to me yesterday by Dr. Allen, with the request that I would examine the specimen enclosed and favor him with my opinion of its condition. * * * I can assure you that I have never seen any specimen which even approximated to this in the number of parasites. * * * After measuring a cubic tenth of an inch (.1) and dividing this again into eight (8) portions, I counted in one of these eights forty-five trichina, all free, none encysted."

The circumstances connected with the cases, as I learned then of Drs. Anderson, Hitchcock and McKee, are these: The mother is an invalid, and previous to their moving into this county they bought pork of a grocer in Edgewood, and the elder sister states that frequently when she went to cook the meat (cured ham,) she would slice off small bits of it and eat it raw, and that she gave some to the younger sister, and they ate of it in the same way; the sister that died being particularly fond of it ate more than she or the

younger sister; the younger sister ate but little, and she was only slightly affected with the disease, the mother never ate any of the meat raw and never had the disease.

The oldest sister is still living, but is in a very precarious condition. It is stated that the grocer bought his pork in Chicago.

Super-Oxygenation.

EDITOR CHICAGO MEDICAL JOURNAL:

GENTLEMEN:—In his remarks on Nitrous Oxide, in the March number of your excellent journal, Dr. S. S. Wallihan does me great injustice in stating that "experimenting with it for dental purposes," I "also administered it tentatively" in various disorders, and that my "deductions were, of course, entirely empirical; at least" I "made no attempt to elucidate the *rationale* of its action." Now, on the contrary, my investigations were more directly in the interest of general medicine, were based upon deductive reasoning, and conducted with a view to demonstrate the medical properties and *rationale* of protoxide of nitrogen. Indeed, special attention was given to this latter, in order to prove the safety and value of nitrous oxide as a sanative agent.

This misrepresentation is the more unjust as it is evident that Dr. Wallihan is mainly indebted to my publications for his knowledge of the medical properties and applications of nitrous oxide, while his observations are only confirmatory of those long since made by myself.

As this statement is due, both to me and the cause of science, I request its insertion in your next issue.

Respectfully, yours,

GEO. J. ZIEGLER, M.D.

PHILADELPHIA, April 8, 1869.

EDITORIAL.

The publication of the CHICAGO MEDICAL JOURNAL having passed into the hands of the subscriber, all payments for subscription and accounts, either past or future, must be made to me, unless otherwise directed. Subscribers who have neglected to pay their subscriptions on volumes previous to the present year must remit at an early day or the publisher will be compelled to discontinue sending them the JOURNAL.

The editorial management will remain as heretofore, in the hands of Dr. J. Adams Allen, assisted by Dr. W. Hay, and to whom communications in his department should be addressed.

J. WOOLCOTT, HOOKER,
Room 12, Union Building.

CHICAGO, May 1st.

The following communication explains itself, and we take much pleasure in publishing to the professional world these evidences of *esprit de corps* and progress in its young members. Deprived of the fostering care extended to it by paternal governments in older civilizations, the development of the science and art of medicine devolves upon its own students, and the alumni of the Chicago Medical College have manifested a most praiseworthy spirit in putting forth, so early in their professional career, this effort to encourage each other in well doing. W. H.

Prize of the Alumni Association of the Chicago Medical College.

This is a prize of one hundred dollars, to be awarded for the best essay on some medical or surgical topic. The subject of the essay is left to the option of the competitor.

The prize is open for competition to all the members of the Association good on the Secretary's books. Every alumnus of the Chicago Medical College is earnestly urged to become a member of the Association by sending his name and one dollar to the Secretary. The Committee on Competing Essays consist of N. S. Davis, M.D., E. Andrews, M.D., H. A. Johnson, M.D., and Walter Hay, M.D. Each essay must be designated by a device or motto, and must be accompanied by a sealed envelope bearing the same device or motto, and containing the name and address of the author. The envelope belonging to the successful essay will be opened, and the name of the author announced, at the regular annual meeting of the Association, also, at the annual Commencement of the College in March, 1870. The competing essay must be sent to the Secretary of the Association on or before the 15th Feb., 1870.

It is expected that the prize essay, and others of marked value, will be published in pamphlet form, and furnished to members of the Association.

S. A. M. WILLIAMS, Sec'y and Treas'r,
166 State St., Chicago, Ill.

Board of Health.

With the beginning of last month (April) the Chicago Board of Health commenced a new era of its existence; the two commissioners appointed at the organization of the Board for the short term of two years, being rotated out of office by the expiration of their term, giving place to two appointed for the full term of six years. The board and the public are to be congratulated upon the re-appointment of one of the old members, Mr. Wm. Giles, to whose intelligence and efficiency we can bear positive testimony. Dr. Schlœtzer, the other appointee, has had the opportunity to add to his professional and scientific acquirements, a thor-

ough familiarity with the practical operations of the Department, having been connected with it since its organization. The Board, as re-organized, has testified its appreciation of the late Sanitary Superintendent, Dr. Jno. H. Rauch, by re-electing him to fill that position, with an increase of compensation commensurate with their appreciation of his value, and now, let us hope the "new brooms will sweep clean," for while much has been done already, the work of sanitary reform is only begun. A little less circumlocution and a little more direct action would greatly enhance the efficiency of the Department.

Craniotomy vs. Forceps.

In a recent discussion upon this subject, before the St. Louis Medical Society, Dr. Boisliniere characterized craniotomy as "a relic of barbarian midwifery," asserting that it was demonstrated by statistics to be almost as fatal to the mother as the Cæsarian Section (the proportion of fatal cases in the former being 1 to $2\frac{3}{4}$, and in the latter 1 to 3, without any hope for the child). An analysis of the opinions apparently the most diverse and opposite demonstrated a growing sentiment in favor of the more frequent and earlier use of the forceps.

PROCEEDINGS OF SOCIETIES.

Minnesota State Medical Society.

About two years before Minnesota became a State, that is, in December, 1855, a State Medical Society was organized in St. Paul, by adopting a Constitution and By-Laws, and the election of the following officers:

President—Dr. THOS. R. POTTER.

Vice President—Dr. J. H. MURPHY.

Recording Secretary—Dr. J. V. WREN.

Corresponding Secretary—Dr. J. D. GOODRICH.

Treasurer—Dr. DAVID DAY.

Censors—Drs. W. H. MORTON, F. R. SMITH, J. H. STEWART, A. E. JOHNSON and A. E. AMES.

Two subsequent meetings were held, the last being at St. Anthony, in 1857. After that period the Society was allowed to languish. The rebellion broke out, and a large number of its members entered the service, and hence no meetings were held until a call was issued, signed by some of its members and others, for a Convention of Physicians at St. Paul, on the 2d of February, 1869.

Dr. J. H. Murphy, the Vice President of the Society, called the meeting to order, and Dr. D. W. Hand was chosen temporary Secretary.

Dr. A. E. Ames, on behalf of the Censors, proposed the names of forty physicians as duly qualified for membership. They were all accepted.

After some desultory discussion concerning the revival of the old Society or the organization of a new one, it was, by unanimous consent, resolved to re-organize.

The following physicians were recommended, and elected officers of the new Society, for the ensuing year:

President—Dr. SAMUEL WILLY, St. Paul.

Vice President—Dr. A. E. AMES, Minneapolis.

Corresponding Secretary—Dr. A. WHARTON, St. Paul.

Recording Secretary—Dr. E. J. DAVIS, Mankato.

Treasurer—Dr. S. B. SHEARDOWN, Stockton.

Censors—Drs. J. H. MURPHY, St. Paul; N. R. HILL, Minneapolis; W W. MAYO, Rochester; A. C. WEDGE, ALBERT LEA and J. C. RHODES, Stillwater.

The first Tuesday in February was the time chosen for holding the annual meeting, and St. Paul selected as the place.

Dr. O. H. Howitt, of Red Wing, was appointed to read an essay at the next annual meeting.

The Society is, also, to hold semi-annual meetings, in different localities throughout the State, and the first of these meetings is to be held at Owatonna, on the 16th of June. The following programme was accepted as the order of exercises at the next semi-annual meeting.

2 P. M.—Essay by Dr. Kimball, Minneapolis; subject, Rheumatism. Dr. Wharton, St. Paul, and A. B. Stewart, Winona, to introduce the discussion of the subject.

3 P. M.—Subject, Quacking; its Diagnosis and Treatment. Dr. Mattocks, St. Paul, and Dr. C. H. Hewitt, Red Wing, to introduce the discussion of the subject.

7. P. M.—Address by Vice President, and discussion of the subject by the members present.

Drs. J. H. Murphy, St. Paul; C. H. Hewitt, Red Wing, and S. B. Sheardown, Stockton, were appointed delegates to the United States Medical Association.

E. J. DAVIS, Rec. Secretary.

MANKATO, MINN., April 15, 1869.

De Witt County Medical Society.

The society met in annual session at the office of Drs. Goodbrake & Edmiston, in the City of Clinton.

The President, Dr. J. A. Edmiston, in the Chair.

Minutes of last meeting read and approved.

Dr. W. G. Cochran, of Farmer City, was proposed for membership, and elected.

Officers for the ensuing year: President, Dr. John Wright; Vice President, Dr. J. W. Edmiston; Treasurer, Dr. C. Goobrake; Secretary, Dr. Edmiston; Censors, Drs. W. G. Cochran, C. Goodbrake, J. H. Tyler.

Dr. Wright, in a neat speech, returned thanks for the honor conferred upon him.

The retiring President, Dr. A. Edmiston, asked until next regular meeting to complete his annual address, which was, on motion, granted.

Drs. C. Goodbrake and John Wright were elected delegates to the American Medical Association, for the next year; and Drs. C. Goodbrake, J. Wright, and B. S. Lewis, were elected delegates to the Illinois Medical Society, with power to designate alternates in case of inability to attend.

Various subjects were brought before the meeting and discussed at length.

Drs. W. G. Cochran and J. H. Tyler were appointed essayists.

On motion, the Secretary was instructed to furnish copies of proceedings to the Clinton papers and Chicago Medical Journals, for publication.

On motion, adjourned until next regular meeting.

JOHN A. EDMISTON, *Sec'y.*

ORIGINAL COMMUNICATIONS.

LEAVENWORTH, April 10, 1869.

DR. J. ADAMS ALLEN:

DEAR SIR:—A person, calling himself Dr. M. F. Turner, is traveling through Kansas with a letter, purporting to have been written by yourself, recommending him to the good offices of medical men.

The letter looks like a forgery to me, and I am certain that the person, though a cripple, is unworthy of the aid he is asking. If you will inform me, if the letter is not genuine, I will put the medical men of the State upon their guard against the man. Very truly, yours,

C. A. LOGAN.

ANN ARBOR, MICH., March 28, 1869.

DR. J. A. ALLEN:

DEAR SIR:—J. W. Shipton, M.D., class of 1867-8, of Rush Medical College, died in Detroit, March 19, 1869.

He was on his way from Florida to his home in Elizabeth, Ill., when he was taken suddenly worse, and died in about four hours. He had been South for the benefit of his lungs.

You may receive more particulars from other sources, but thought I would communicate the fact, as no one else might do so.

Yours, etc.,

J. T. SCOVELL, Class 1867-8, R. M. C.

LOOT.

Chestnut Leaves in Hooping Cough.

Dr. J. Ludlow communicates to the Cinn. *Lancet and Observer* the successful results of his treatment of hooping-cough with infusion of chestnut leaves—half-ounce to the pint of boiling water, subsequently diluted with a pint of cold water, sweetened and administered *ad libitum.*

Obscure Cases of Sudden Death.

Wooster Beach, Jr., M.D., writes to the *Medical Record:*

Many physicians, and particularly those who make post-mortem examinations for coroners, will frequently meet with cases of sudden death, I might say *instantaneous* death, for which they can discover no satisfactory cause, neither in the symptoms immediately preceding it, nor in the appearance of the body on autopsy. An individual, man, woman, or child, without a premonition of any kind, suddenly

utters an exclamation of surprise, perhaps of pain, or it may be, entirely without warning, sinks to the earth. Those near him hasten to his assistance, and find him either entirely dead, or drawing his last breath. In some instances the premonitory symptoms are slightly more marked, or of greater duration, but are not such as to point to the solution of the manner of death. A post mortem examination is made. The body has the external appearance of robust health. Every organ is carefully examined, and found to be in a perfect normal state, and the indications of health are as well marked in the interior as was the case in the exterior of the body. What is the cause of death?

The solution of this question is required, I estimate, in full fifteen per cent. of sudden, or, more properly, instantaneous deaths, and probably in a larger per centage. Without doubt, a great proportion of sudden deaths ascribed to valvular disease of the heart—to uræmia—to serous apoplexy, and to other causes, only occasionally proving suddenly fatal, really belong to this class of obscure causes under consideration. Physicians making examinations, unaware of the frequency of the existence of these causes, naturally ascribe death to a diseased condition, be it ever so slight, of almost any organ.

There are many cases of sudden death, the causes of which become easily apparent on autopsy, as many diseases of the heart, rupture of aneurisms, cerebral apoplexy, etc. I confine myself to those only in which nothing is found to explain the fatal termination; and it is these I designate "obscure cases of sudden death." Some few authors have given attention to this subject; yet it appears to me, without throwing much light upon it, or towards clearing up the mystery that surrounds it. The explanation that has been given in many of these cases, is certainly very unsatisfactory. Some of them I propose briefly to notice.

Fatty degeneration of the heart. Too many pathologists of note ascribe death to this disease to make it doubtful that it is a cause. This degeneration of the organ very frequently exists, yet death is seldom traced to it. Sudden deaths, at any rate, not occurring as a rule, in subjects with this affection, should make us exceedingly careful in

ascribing such deaths to it even when we find its existence well marked.

Other affections of the heart are, of course, very numerous, and I only allude to them to remark that death is undoubtedly referred to them when they are insufficient for its cause. Disease of the heart, according to vulgar and even learned opinion, has to answer for many deaths of which it is entirely innocent. Rheumatism of the heart has been mentioned as terminating suddenly in death, and leaving no traces to show its cause; but we know that rheumatism of the organ pursues a course which gives plain indications of its existence in life, and produces pathological changes easily recognized after death. Paralysis of the heart is said to be accountable for sudden death—but this is a mere hypothesis.

Embolism might explain deaths in some instances where the clot is so large as to considerably obstruct the heart's action—but obstruction to a single large vessel of the brain should not be sufficient explanation for death. No more serious results should follow a plug in such vessel, than stopping the flow of blood through it by a ligature.

Accumulation of flatus in the stomach—fatty degeneration of the diaphragm—engorgement of the lungs and congestion of the brain, have been given among other causes, but they fail to offer a satisfactory solution of this mode of death. As regards these two latter causes, I may state that it is not unusual to find hypothetic congestion of the lungs, strongly marked, and fullness of the cerebral vessels, but these I consider due to the fluidity of the blood—the blood being almost unexceptionably fluid in these as well as other cases of sudden death.

I have been actuated in bringing the attention of the profession to this subject, by the hope that some suggestion may be elicited as to what manner of inquiry should be adopted in studying this strange phenomenon. Although I have seen a large number of cases of this class, and have had the assistance of able pathologists in their investigation, I am entirely unable to say more in regard to the appearance found, than stated above: that the entire system has presented no deviation from sound health.

Yet some morbid change has taken place as completely and suddenly fatal as an extensive rupture of the heart, or a hemorrhagic effusion around the medulla oblongata.